

## The Interagency Ecological Program for the San Francisco Estuary



### Agenda Item # 2a: Quarterly IEP Science Highlights

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**Time Needed:** 20 minutes

**Justification for Action Requested:** The IEP Science Highlights provide recent examples of how the IEP accomplishes its mission\* and recent scientific results of interest to the IEP Agency Directors and other decision and policy makers, managers, other scientists, stakeholders, and the public. In addition to providing a brief summary of relevant information, the IEP Science Highlights are also intended to stimulate discussion about additional priority management and policy science needs and about how these needs might best be met. The one-page IEP Science Highlights (formerly “POD Highlights”) have been produced by the IEP Lead Scientist and IEP Management Team on a near-quarterly basis since 2009 and are publicly available at <http://www.water.ca.gov/iep/highlights/index.cfm> .

*\* “The mission of the IEP is to provide and integrate relevant and timely ecological information for management of the Bay-Delta ecosystem and the water that flows through it. This is accomplished through collaborative and scientifically sound monitoring, research, modeling, and synthesis efforts for various aspects of the aquatic ecosystem. The IEP addresses high priority management and policy science needs to meet the purposes and fulfill responsibilities under State and Federal regulatory requirements. The IEP relies upon multidisciplinary teams of agency, academic, NGO, and other scientists to accomplish its mission.”*

#### **Accomplishments:**

- See next page for the current edition of the quarterly IEP Science Highlights.

**Challenges:** Communication with and timely input from stakeholders and community scientists continues to be a valuable and timely concern of the Lead Scientist. Dr. Culberson’s 1<sup>st</sup> Year “Listening Tour” continues as does his on-boarding and education to the roles, responsibilities, and opportunities the IEP has in front of it for 2017 and beyond. Lead Scientist focus is beginning to shift from program functional issues to science vision and planning in anticipation of larger Science Enterprise direction-setting over the next 12-18 months.

#### **Anticipated Next Steps:**

- IEP Annual Work Plan – June - August 2017
- Lead Scientist “Listening Tour” continues (17 of 40-42 interviews completed)
- Update to IEP Program documents (Work Plan, Governance Framework) – draft to CT June 2017
- Delta Stewardship Council Independent Science Board Review of the Monitoring Enterprise 2017-18 -- solicitation and contracting for first phase (inventory) underway
- Update of IEP Science Strategy (including outreach and input solicitation) 2017-18
- SAG Review process update nearly complete – trying to close the loop on previous reviews and solicit ideas for next reviews (Program Elements? Science Strategy? IEP Strategic Plan?)

## IEP Science Highlights

### Directors' Meeting Update

June 2017

#### General

- RV Sentinel sampling cruises have begun (and now everyone wants one....)

#### Salmon

- *2017 floodplain inundation*- Likely positive effects on juvenile salmon (see SacPAS figure, below).
- *Oroville Dam*: Emergency releases likely impacted salmon incubation and rearing, but specific impacts have not yet been quantified.
- *Sacramento River adult escapement*- Winter-, spring-, and fall-run expected to be reduced by drought conditions over the past years. For example, few winter-run Chinook have been observed.
- *SAIL efforts*- Continuing progress on supporting recommendations (CT report-out)

#### Delta Smelt

- *Delta Smelt Spring Kodiak Trawl 2017 index* – surveys completed and established an index of 3.8 (2<sup>nd</sup> lowest on record—See below).
- *High water temperatures* –Levels of 20+ degrees in May measured in the north Delta by several monitoring programs, which could adversely affect spawning conditions.
- *Enhanced Delta Smelt Monitoring (EDSM)*
  - Project came online in late 2016 as planned--full-time biologist and up to 15 support staff.
  - 20mm sampling in all strata at both open water and nearshore locations commenced in April 24 continues to occur weekly with near-real-time processing of samples (48-72 hours).
  - Kodiak trawling resume this summer.

#### Other Native Fishes

- *Longfin Smelt*-- Longfin Smelt are recruiting in San Pablo Bay, mostly downstream of IEP larval sampling. This is expected based on the high flow conditions.
- *Splittail* - Year-class appears very good from initial collections in FWS beach seine and Delta salvage.

#### Science Communication Highlights

- Completion of IEP Tidal Wetlands Conceptual Model report.
- Featured publication: “Long-term studies contribute disproportionately to ecology and policy” by Brent B. Hughes and **35 others!** *BioScience*, 67(3):271-281.
  - Study assessing the impact of long-term vs. shorter studies.
  - The longer a study is the more impactful it becomes in literature.
  - Long-term studies have a higher likelihood of informing policy than would be apparent from their citation rate in the ecological literature.
  - Recommend increased investments in long-term studies relative to “issue of the day”.

#### Project Work Team updates

- Flow Alteration PWT soliciting comments on draft monitoring plan for 2018.
- Request made and materials submitted for Spring Run Salmon PWT – first mtg TBD.
- Estuarine Ecology Team (EET) re-booted in spring; next meeting in July.
- Resident Fishes PWT reactivated.

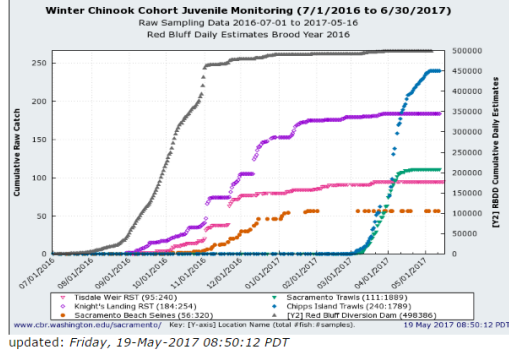
# The Interagency Ecological Program for the San Francisco Estuary



## Supplemental Material:

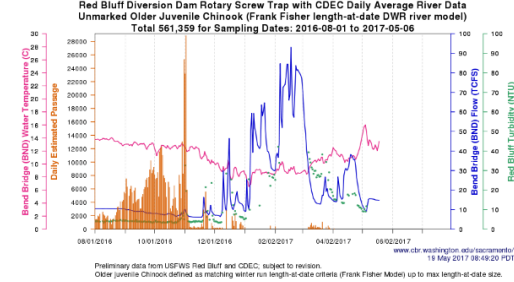
### Cohort Juvenile Monitoring

Cohort Juvenile Monitoring at Sacramento River rotary screw traps, beach seines, and trawls with Red Bluff Estimates



### Juvenile Salmonid Monitoring

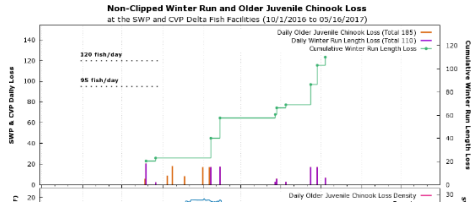
Unmarked Older Chinook, Fry/Smolt Chinook, and Steelhead at Sacramento River (Red Bluff, Tisdale), Lower Sacramento River (Knight's Landing, Sacramento Trawls, Chipps Island) and San Joaquin (Mossdale) with associated Water Temperature, Flow and Turbidity



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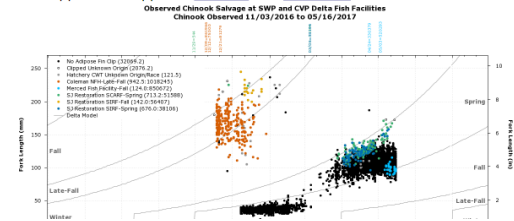
### Delta Loss

Non-clipped Older Chinook, Fry/Smolt Chinook, and Steelhead at SWP and CVP Delta Fish Facilities



### Delta Salvage

Non-clipped and clipped Chinook and Steelhead at SWP and CVP Delta Fish Facilities



[http://www.cbr.washington.edu/sacramento/data/juv\\_monitoring.html](http://www.cbr.washington.edu/sacramento/data/juv_monitoring.html)

Subject: 2017 Index of Delta Smelt Relative Abundance from the Spring Kodiak Trawl

### 2017 Results

The 2017 Spring Kodiak Trawl (SKT) index is 3.8 and a slight increase from the record-low 2016 SKT index (Figure 1). The SKT monitors the adult spawning stock of Delta Smelt, and this year's low index indicates that the number of spawners remains relatively low. Twenty five adult Delta Smelt were collected at 17 stations contributing to the index in 2017 (Figure 2).

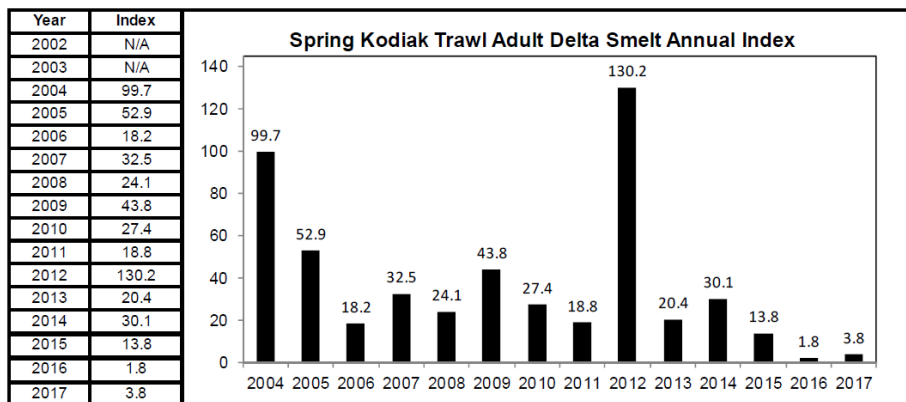


Figure 1. The CDFW's Spring Kodiak Trawl Delta Smelt index over the period of record, 2004-2017.